

**AMENDMENTS TO THE CLAIMS**

Please cancel claims 1-3 and add new claims 4-39. This listing of claims will replace all prior versions and listings of claims in the application.

1-3. (Canceled).

4. (New) A system for analyzing one or more ion species of a sample, the system comprising,

a first ion mobility filter associated with a first flow path for passing first ions of an ion species of the sample,

a second ion mobility filter associated with a second flow path for passing second ions of the sample, the second flow path in fluid communication with the first flow path, and

a third ion mobility filter associated with a third flow path for passing third ions of the sample, the third flow path in fluid communication with the first flow path.

5. (New) The system of claim 4, wherein the second ions include the first ions.

6. (New) The system of claim 5, wherein the third ions include the first ions.

7. (New) The system of claim 4, wherein at least one of the first, second, and third ion mobility filters includes a differential ion mobility spectrometer (DMS) filter.

8. (New) The system of claim 4, wherein at least one of the first, second, and third ion mobility filters includes an ion mobility spectrometer (IMS).

9. (New) The system of claim 4 comprising a first ion detector in the first flow path.

10. (New) The system of claim 9, wherein the first ion detector includes one or more electrodes.

11. (New) The system of claim 9 comprising a second ion detector in the second flow path.
12. (New) The system of claim 11, wherein the second ion detector includes one or more electrodes.
13. (New) The system of claim 11 comprising a third ion detector in the third flow path.
14. (New) The system of claim 13, wherein the third ion detector includes one or more electrodes.
15. (New) The system of claim 4 comprising a fourth ion mobility filter associated with a fourth flow path for passing fourth ions of the sample.
16. (New) The system of claim 15, wherein the first and fourth flow paths extend radially outward from a common ion inlet.
17. (New) The system of claim 15 comprising a fourth ion detector in the fourth flow path.
18. (New) The system of claim 17, wherein the fourth ion detector includes one or more electrodes.
19. (New) The system of claim 15, wherein the fourth ion mobility filter includes at least one of an differential ion mobility spectrometer (DMS) filter and an ion mobility spectrometer (IMS).
20. (New) The system of claim 15, wherein the first flow path and fourth flow path are the same flow path.
21. (New) The system of claim 4 comprising a controller for automatically controlling at least one of the first, second, and third ion mobility filters.

22. (New) The system of claim 4 comprising a mass spectrometer in fluid communication with the first flow path.
23. (New) The system of claim 4 comprising a gas chromatograph for providing one or more ion species of the sample to the first flow path.
24. (New) A method for analyzing one or more ion species of a sample, the system comprising,  
    filtering first ions of a first ion species of the sample within a first flow path,  
    filtering second ions of the sample within a second flow path, the second flow path in fluid communication with the first flow path, and  
    filtering third ions of the sample within a third flow path, the third flow path in fluid communication with the first flow path.
25. (New) The method of claim 24, wherein the second ions include the first ions.
26. (New) The method of claim 25, wherein the third ions include the first ions.
27. (New) The method of claim 24, wherein filtering within one of the first, second, and third flow paths includes applying at least one asymmetric RF field.
28. (New) The method of claim 24, wherein filtering within one of the first, second, and third flow paths includes applying a shuttered voltage gradient.
29. (New) The method of claim 24 comprising detecting ions in the first flow path.
30. (New) The method of claim 24 comprising detecting ions in the second flow path.
31. (New) The method of claim 30 comprising detecting ions in the third flow path.

32. (New) The method of claim 24 comprising filtering fourth ions of the sample within a fourth flow path.
33. (New) The method of claim 32 comprising extending radially outward the first and fourth flow paths from a common ion inlet.
34. (New) The method of claim 32 comprising detecting ions in the fourth flow path.
35. (New) The method of claim 32, wherein the filtering includes at least one of applying an asymmetric RF field and applying a shuttered voltage gradient..
36. (New) The method of claim 32, wherein the first flow path and fourth flow path are the same flow path.
37. (New) The method of claim 24 comprising automatically controlling the filtering within at least one of the first, second, and third flow paths.
38. (New) The method of claim 24 comprising flowing the first ions into a mass spectrometer.
39. (New) The method of claim 24 comprising eluting the one or more ion species of the sample from a gas chromatograph.